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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,515

04/07/2005

Takenobu Sunagawa

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,515	Applicant(s) SUNAGAWA ET AL.	
	Examiner MICHAEL M. BERNSHTEYN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on June 4, 2008. Claim 3 has been amended; no claims have been cancelled or added.
2. Applicant's arguments with respect to claims 1-6, 8 and 9 have been considered. Applicant's arguments, see remarks, filed on June 4, 2008, with respect to the rejection(s) of claim(s) 1-6, 8 and 9 under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Meyer et al. (U. S. Patent 5,854,346) and the rejection of claim 3 under 35 U.S.C. §112, 2nd paragraph have been fully considered and are persuasive. Therefore, the final rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nakado (JP 2001-098145), Saito (JP 62-187756) and Deyrup et al. (U. S. Patent 4,912,167).
3. This is the second non-final rejection.
4. Claims 1-6, 8 and 9 are active.

Claim Rejections - 35 USC § 103

5. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.
6. Claims 1-6, 8 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable as obvious over Nakado (JP 2001-098145) in view Meyer (U. S. Patent 5,854,346).

With regard to the limitations of claims 1-3, 6 and 9, Nakado discloses a thermoplastic polyester resin composition, which is obtained by compounding 100 pts.

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wt. of thermoplastic polyester resin (A) with 0.1-10 pts. wt. of a carboxylic acid reactive group-containing polymer (B-1) and /or a compound (B-2) containing plural oxazoline groups in the molecule and 0.01-5 pts. wt. of carboxylic acid anhydride (abstract).

Nakado discloses that when a polymer (B-1) has an **epoxy group**, it can be obtained from glycidyl methacrylate or metaglycidyl acrylate and copolymerizable monomer, such as methyl (meth) acrylate, butyl (meth) acrylate, 2-ethylhexyl (meth)acrylate, etc. The number average molecular weight of the polymer (B-1) has the desirable range of 1,000-20,000, which is within the claimed range (pages 3-4, [0018]-[0020]). The polymer (B-1) corresponds to the claimed viscosity modifier.

Nakado discloses that the polyester comprises acid components, such as dicarboxylic acid, terephthalic acid, cyclohexane dicarboxylic acid, etc., and glycol components, such as ethylene glycol, trimethylene glycol, etc. (page 2, [0011]).

Nakado discloses that polyethylene terephthalate and polybutylene terephthalate are desirable as the thermoplastic polyester (page 3, [0012]).

Nakado discloses that the weight ratio of unit (a) and (b) in the viscosity modifier is within the claimed range (page 8, [0040]).

Furthermore it is worth to mention that with respect to polymer (B-1), the skilled artisan would have recognized that the claimed weight ratio of unit (a) and (b) are result-effective variables for viscosity modifier. In light of this, it has been found that, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation," *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955); and, "a particular parameter must first

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be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation," ***In re Boesch***, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed weight ratio of units (a) and (b) in the teachings of Nakado because optimization of such result-effective variables ensures proper process-ability and properties of the viscosity modifier.

Nakado does not disclose that the thermoplastic polyester resin composition comprises a core-shell graft polymer (C).

With regard to the limitations of claims 1-3, 6 and 9, Meyer discloses a toughened blend of an aromatic polyester, preferably an alkylene terephthalate, and most preferably poly(butylene terephthalate), with from 5 to 20 parts (per 100 parts of polyester) of an impact modifier, which is a blend of (a) 80 to 85 weight percent of a **core/shell impact modifier** having (1) from 70 to 90 parts of a core of a rubber which is a homopolymer of butadiene or a copolymer of butadiene with up to about 30% of at least one copolymerized vinyl monomer; (2) at least one shell, which shell is a homopolymer of methyl methacrylate or a copolymer which contains a majority of units derived from either methyl methacrylate or styrene; and b) 15 to 20 weight percent of a linear copolymer which contains from 50 to 85 parts of units derived from ethylene, from 5 to 40 parts of units derived from a C1 -C8 ester of (meth)acrylic acid, and from 2 to 10

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parts of a copolymerizable monomer containing an epoxy group (col. 1, line 61 through col. 2, line 14).

Both references are analogous art because they are from the same field of endeavor concerning new impact modifiers for the thermoplastic polyester resin compositions.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the core/shell graft polymer having the claimed amounts of units as taught by Meyer in Nakado's thermoplastic polyester resin composition because it was found that blends of two types of impact modifiers within a certain compositional range offer several unexpected advantages. First, the impact strength imparted by the blend of impact modifiers is unexpectedly higher than would be predicted by averaging values from blends where only one impact modifier is present. Secondly, the blend imparts acceptable impact strength values while producing a blend of acceptable melt viscosity for injection molding purposes. Third, the blend does not require the addition of expensive polycarbonate resin (US'346, col. 51-60), and thus to arrive at the subject matter of instant claims 1-3, 6 and 9.

With regard to the limitations of claims 4 and 5, Nakado discloses a molded article obtained by extrusion molding the thermoplastic polyester resin composition having not only mechanical characteristics and durability but also sufficiently excellent moldability (abstract, pages 6-7, [0029]-[0037]).

7. Claim 8 is rejected under 35 U.S.C. §103(a) as being unpatentable as obvious over Nakado (JP 2001-098145) in view Meyer (U. S. Patent 5,854,346) as applied to claims 1-6 and 9 above and further in view of Carson et al. (U. S. Patent 5,321,056).

The disclosure of Nakado and Meyer's references residing in § 6 is incorporated herein by reference.

With regard to the limitations of claim 8, the combined teaching of Nakado and Meyer does not disclose that the thermoplastic polyester resin (A) has a crystallinity at most 20%.

Carson discloses that when the core-shell modifiers are added to amorphous polyesters and found to produce ductile, notched breaks, the clarity of amorphous polyester resins is destroyed. Amorphous polyester may contain a small amount of crystallinity, but the level must be low enough so that clarity is not adversely affected (col. 1, lines 43-49).

All these references are analogous art because they are from the same field of endeavor concerning new impact modifiers for the thermoplastic polyester resin compositions.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the crystallinity of the thermoplastic polyester resin (A) in the small amount as taught by Carson in Nakado and Meyer's thermoplastic polyester resin composition because the level of crystallinity must be low enough so that clarity of amorphous polyester resins is not adversely affected (US'056, col. 1, lines 43-49).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael M. Bernshteyn/
Examiner, Art Unit 1796

/M. M. B./
Examiner, Art Unit 1796

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796

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